

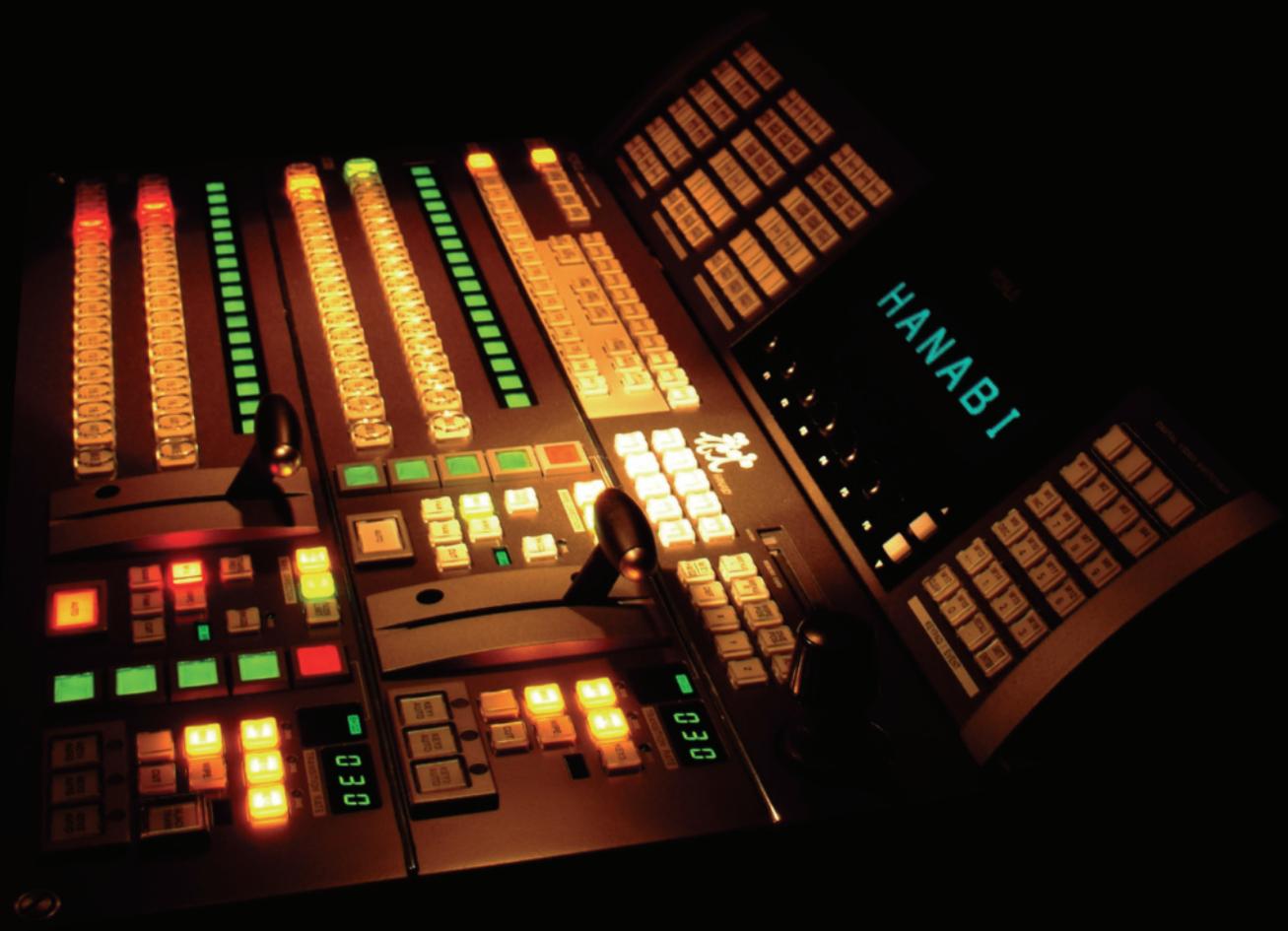
2M/E Digital Video Switcher
HVS-3800HS/S "2M/E HANABI"

FOR.A[®]
INNOVATIONS IN VIDEO
and AUDIO TECHNOLOGY

花火
HANABI

2M/E Digital Video Switcher

HVS-3800HS/S "2M/E HANABI"



Most Powerful 2M/E HANABI

The 2M/E HANABI has made another dramatic advance by adding HD/SD multi-bit rate/multi-format support*, real 3D digital video effects (DVEs), color correction, a wide range of expansion options for ensuring future compatibility, and a host of other functions. The HVS-3800 series offers functions and performance that are a step ahead of the competition.

* HVS-3800HS only. The HVS-3800S supports only SD formats.

HVS-3800HS: HD/SD switchable model

HVS-3800HS is switchable between HD or SD formats by simply re-initializing the Operation Unit's mode setup. HVS-3800HS functions in various HD formats such as 1080/60i and 720/60p. Additional support includes 4:3 display generation in HD mode; or the choice of letter-box (only NTSC) or squeeze display in SD mode. Thus, providing the preparation needed for up/down conversions.

Support format:

HD formats: 1080/60i, 59.94i, 50i, 24p, 24PsF, 23.98p, 23.98PsF, 720/60p, 59.94p

SD formats: 525/60 (NTSC), 625/50 (PAL)

HVS-3800S: SD model

In addition to the HD/SD multi-bit rate/multi-format model, the lineup also includes the HVS-3800S model specifically designed for SD. It provides the full range of features included in the HVS-3800 series at a reasonable price.

Easy Upgrading to HD/SD

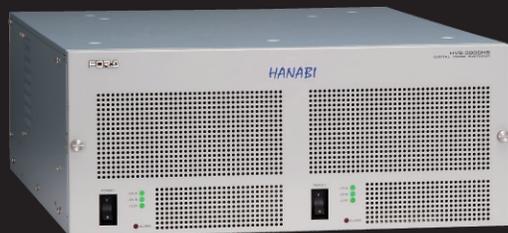
By purchasing HVS-3800S, you don't have to worry about HD compatibility in the future. The HVS-3800S and HVS-3800HS share a common platform so when you examine converting to HD, you eliminate the need for additional investments to replace the main unit. Instead, you can upgrade to the HVS-3800HS for support of HD and SD with only a minimum amount of cost.

New Control Panel

The HVS-3800 series includes compact, 12-button or 16-button or 24-button control panel. The control panel keeps the same familiar HANABI series operating system that has been widely used by our customers with a new design for easier usage and more functionality.

4RU Frame Size

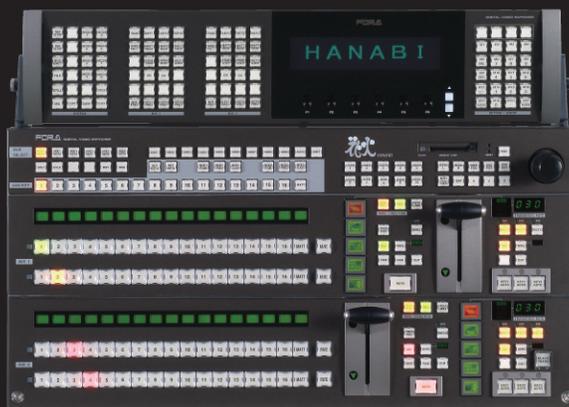
The main unit incorporates a redundant power supply, DVE cards, additional function options, and a wide range of other functions in 4RU size. The additional function options also allow installation of a number of video peripherals for use of fewer system devices and reduced space.



HVS-3800HS/S (Main Unit)



HVS-12ROUA (12-button)



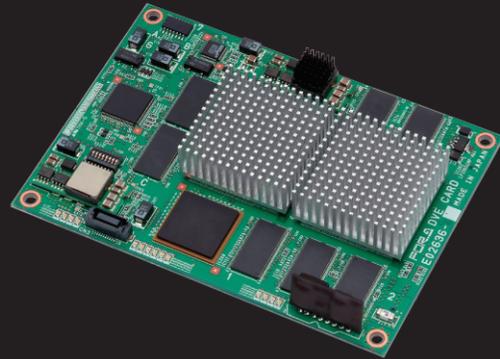
HVS-16OUA (16-button)



HVS-24OUA (24-button)

High-performance, Compact DVEs

Internal DVE cards can be installed for enabling effects. Up to 2 cards can be installed. HVS-38DVE2D designed for HVS-3800HS. It enables use of 1-channel DVE in HD mode or 2-channel DVEs in SD mode. Also HVS-38SDVE2D designed for HVS-3800S. It enables use of 2-channel DVEs in SD mode. The channels can be assigned to any bus (BKGD, KEY1, KEY2, and KEY3).



Real 3-dimensional DVEs

In addition to regular DVEs, users can also install a card for the most eye-catching feature of the HANABI series, real 3D DVEs.



3D Page Roll



3D Quad Turn



3D Pizza Box



3D Sphere



Border Trail (Decay effect)



Defocus & Resize



Ripple



Spot light



High light (Color)

Real 3D DVE

Real-time rendering for mapping images to 3D shapes such as Page Turn and Sphere and providing complete 3D processing for DVEs.

Uncompromised high image quality

Filtering is optimized for the image size for improved enlargement and reduction quality, and an edge key generation function is used to reduce jaggedness for higher image quality.

New defocus circuit design

Defocus effects can be applied as sub effects and used simultaneously with DVEs.

Trail effects

In addition to regular decay trails and star trails, border trails are also available that provide trail effects in border colors.

Internal still image memory

Includes an internal still image memory within DVEs to enable mapping of still images to the side image of a pizza box or the back side of a page turn.

Color Correction Features Added

Optional color correction functions can be applied to the primary inputs and keyers. Proc Amp controls, gamma corrections and various clip functions are all available. The parameters for any of these functions can be registered in the event memory to enable different changes to be made in the course of sequences.

<Main color correction functions>

- Three color correction modes (balance, differential and sepia)
- Gamma adjustment functions in HIGH, MID and LOW tones
- Proc Amp controls (video level, chroma level and setup level)
- Various clip functions (RGB/YPbPr)

Color Correction Mode



Balance mode:

For color correction in RGB signals.



Differential mode:

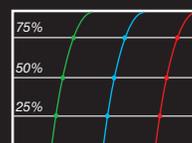
For color correction without upsetting the white balance.



Sepia mode:

For converting the colors into a monotone.

Gamma Correction



For gamma correction separately for the RGB signals in the HIGH (near 75%), MID (near 50%) or LOW (near 25%) tone.

6 Keyers



The HVS-3800HS offers a total of 6 keyers, with 3 keyers for each M/E (2 keyers + 1 DSK) as standard. This enables keying of up to 9 layers when the M/E re-entry is used. Chroma key functions are also available for KEY1 and KEY2 of each M/E. Up to 4 keyers can be used.

Line DVEs

DVEs can be applied to the PGM, PST, KEY1, KEY2, and KEY3 buses for enabling transitions for the image using wipe or mix. This makes it easy to set picture-in-picture and other effects.



Touch Panel Display



Optional HVS-DPUA touch panel display unit delivers fingertip control of all functions and supports storage of numerous still pictures on a built-in HDD.

Up to 6 Still Stores

In addition to the standard 4 still stores, a memory card can be used to enable importing of image data from a PC and exporting images stored in the switcher. Logo animation and motion blur using divided areas of the image are also supported. HVS-38SS or HVS-38SSAM6/12 options can be added for two more still stores.



Additional Still Image Storage

In addition to memory cards, HVS-38SS or HVS-38SSAM6/12 options can also be installed in the main unit. This enables storing of up to 200 still images files (in HD format) without using any external media.

*This option does not support recording or playback of the following formats: 1080/24p, 1080/24sF, 1080/23.98p and 1080/23.98sF

Movie Playback Function

An optional frame memory HVS-38SSAM6/12 can be installed as an expansion function to enable storage and playback of movie files as uncompressed HD video.

- HVS-38SSAM6: HD: 3 sec., 2 ea. or SD: 19 sec., 2 ea.
- HVS-38SSAM12: HD: 6 sec., 2 ea. or SD: 38 sec., 2 ea.

Forced Background

The Forced Background function allows mixing or wiping effects inside the digital effects image for more versatile renditions of effects despite being a 2M/E switcher.

Event Memory

The HVS-3800HS includes an event memory that can store the data for up to 200 events and setting conditions.



Up to 16 AUX Bus Outputs

HVS-3800 series features 10 standard auxiliary output buses. HVS-38AUMV option can be added for 6 more auxiliary buses. Expansion of your system is easy. You can even connect an optional auxiliary controller for remote operation.



4-split Screen Display

With the HVS-38AUMV option, the HVS-3800 series can accommodate two 4 input systems that can show split-screen displays on a single screen. The inputs can be assigned to any section of the split screen display. This enables use of fewer monitors for checking the display input without any external devices.



Up Converter and Down Converter Installation

Up to 4 channels can be installed for up converter input HVS-38UC or down converter output HVS-38DC*. This enables up-converted signals to be assigned to the M/E, AUX, and KEYSER buses in the same way as external input and internal still stores. *The down converter output allows installation of one channel only.



Editor Support

Support is provided for a wide range of editing protocols. Installation of the optional editor interface HVS-38ED enables connection of editors from various makers to this system. (Supported protocols: BVS-3000 and GVG-100)

Sequence Function

A sequence memory of up to 20 patterns can be set in combination with the registered event memory. Sequences can be linked to faders for even easier operation.

User Setting Buttons

Shortcut buttons are provided that enable registration of user-selected functions and menu options for speedy switcher operation.



Motion Blur

The Motion Blur function can provide blur trail effects for moving images. The effect level can be adjusted with the fader control.

Gradation Matte

A gradation function based on up to 5 colors is provided. Colors can be assigned to backgrounds, wipe borders, and keyer mattes.

Edit Preview

AUX 10 can be operated as an edit preview bus using control from the editor. (This requires the optional HVS-38ED editor interface.)

Safety Area Marker and Color Bars

A safety area marker is provided for use during down conversion and can be displayed as a box or bracket shape. Color bar generation also comes standard.

ANC Data Through/Swap Function

In the AUX output, the ANC data can pass through or be swapped.

Network Support

The standard ARCNET interface is provided to enable connection of multiple OUs for a single main unit and control of multiple main units from a single OU (up to five units). Installation of the Ethernet allows images to be transferred from a PC over a network connection.

Options

Options for HVS-3800HS

HVS-38HSDI: HD/SD 12 Input Expansion Card

This option adds 12 HD/SD-SDI inputs for enabling expansion to a maximum of 28 inputs.

HVS-38DVE2D: HD/SD-compatible 2D DVE Card

This option enables DVEs for 2 channels in SD and 1 channel in HD. Up to 2 cards can be installed.

HVS-38DVE3D: HD/SD-compatible Real 3D DVE Card

This option enables real 3D DVE effects. (Not compatible with the HVS-38DVE2D.)

HVS-38CC: Addition of Color Correction for HVS-3800HS

This option adds a color correction function to the primary inputs and keyers. (It can be set for each bus, keyer, and input.)

Options for HVS-3800S

HVS-38SSDI: SD 12 Input Expansion Card

This option adds 12 SD-SDI inputs for enabling expansion to a maximum of 28 inputs.

HVS-38SDVE2D: SD 2D DVE Card

This option enables DVEs for 2 channels in SD. Up to 2 cards can be installed.

HVS-38SDVE3D: SD Real 3D DVE Card

This option enables real 3D DVE effects. (Not compatible with the HVS-38SDVE2D.)

HVS-38SCC: Addition of Color Correction for HVS-3800S

This option adds a color correction function to the primary inputs and keyers. (It can be set for each bus, keyer, and input.)

Expansion Options / Editor Interface

HVS-38IOEX: HVS-38AUMV/UC/DC Interface Card

Necessary interface card for installing HVS-38AUMV, HVS-38UC and HVS-38DC options. Only one card can be installed.

HVS-38AUMV: Expansion of AUX/MV Card

This option adds 6 AUX outputs, the 4-split screen display function, and 2 asynchronous inputs.

HVS-38SS: Expansion of Still Store Card

This option adds 2 built-in still stores and expands the still image storage capacity.

HVS-38SSAM6/12: Expansion of Still Store and Animation Card

This option adds 2 internal still stores, expands the still image storage capacity, and adds a movie playback function.

*This option does not support recording or playback of the following formats: 1080/24p, 1080/24PsF, 1080/23.98p and 1080/23.98PsF

HVS-38UDIF: HVS-38UC/DC Interface Card

Additional interface card for the HVS-38IOEX. Required to install the HVS-38UC and HVS-38DC. Only one card can be installed. (Required HVS-38IOEX option, HVS-3800HS only)

HVS-38UC: Up-converter Card

This option adds up-converter input. Up to 4 cards can be installed. Up to four cards including the HVS-38DC. (Required HVS-38UDIF option, HVS-3800HS only)

HVS-38DC: Down-converter Card

This option adds down-converter output. A maximum of 1 card can be installed. (Required HVS-38UDIF option, HVS-3800HS only)

HVS-38ED: Editor Interface

This software option provides support for the BVS-3000 and GVG-100 editing protocols.

Configuration of expansion options

Functions \ Required option	HVS-38IOEX	HVS-38AUMV	HVS-38UDIF	HVS-38UC	HVS-38DC	HVS-38SS	HVS-38SSAM6/12	HVS-38ED
Adds 6 AUXs, 2 quad viewers, 2 utility inputs	✓	✓						
Adds Up-converters (max. 4 inputs)	✓		✓	✓				
Adds Down-converter (max. 1 outputs)	✓		✓		✓			
Adds 2 still stores, expands the still image storage						✓		
Adds 2 still stores, expands the still image storage, movie playback function							✓	
Editor Interface								✓

Hardware Options

HVS-38PSM: Redundant Power Supply for Main Unit

This unit features a redundant power supply design for the main unit and provides hot swap and shutdown functions.

HVS-TALR20/32: Tally Relay Unit

This is a relay contact type of tally unit. Output signals can be assigned to any channel. It includes 20 or 32 independent output circuits. Up to 5 units can be linked using a cascade connection.

HVS-AUX8/16/32: AUX Switchbox with Shift

This unit enables support for 8/16/32 inputs using the shift button. Up to 16 units can be connected, and inputs can be assigned to any panel.

HVS-DPUA: Touch panel display unit

External display unit for touch panel operation. Delivers fingertip control of all functions and supports storage of numerous still pictures on a built-in HDD.

HVS-12PSO: Redundant Power Supply for OU

This unit features a redundant power supply design for the operation unit (12ROUA).

HVS-38PSO: Redundant Power Supply for OU

This unit features a redundant power supply design for the operation unit (16/240UA).

HVS-TALOC20/32: Tally Open Collector Unit

This is an open collector type of tally unit. Output signals can be assigned to any channel. It includes 20 or 32 independent output circuits. Up to 5 units can be linked using a cascade connection.

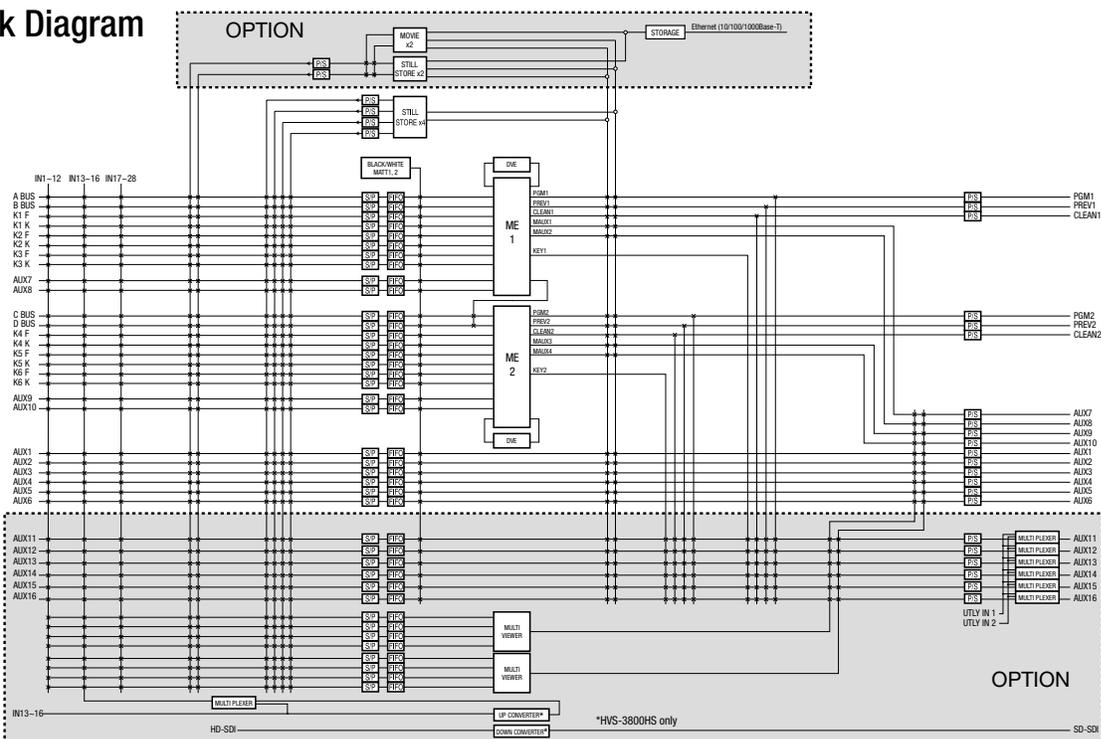
HVS-AUX8RK/AUXRK: AUX Panel Extension Kit

HVS-AUX8RK/AUXRK enables separation and extension of the HVS-AUX8/16/32 panel. Extension is possible up to 5 meters.

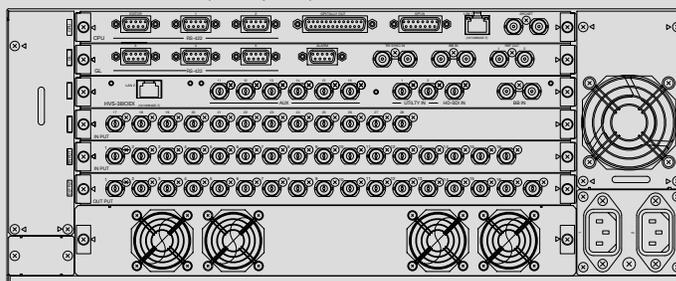
Specifications

	HVS-3800HS: HD mode	HVS-3800HS: SD mode / HVS-3800S
Standard	1080/60i, 59.94i, 50i, 24p, 24PsF, 23.98p, 23.98PsF, 720/60p, 59.94p (Selectable at menu) (Other formats to be released)	525/60 (NTSC), 625/50 (PAL) (selectable at menu)
Signal processing	4:2:2:4 digital component, 10-bit	
Video Input	16 standard inputs, optionally expandable to 31 inputs (28 inputs + 2 utility inputs + 1 down-convert input) HD SDI: 1.485Gbps or 1.485/1.001Gbps, 75Ω, BNC	
Reference Input	Tri-level Sync: ±0.3Vp-p or BB: 0.429Vp-p (NTSC) /0.45Vp-p (PAL) 75Ω or loopthrough, 1ea., BNC	SD-SDI: 270Mbps, 75Ω, BNC BB: 0.429Vp-p (NTSC) /0.45Vp-p (PAL), 75Ω or loopthrough, 1ea., BNC
Video Output	16 standard outputs, optionally expandable to 23 outputs (22 outputs + 1 down-convert output) HD SDI: 1.485Gbps or 1.485/1.001Gbps, 75Ω, BNC	
Reference Output	Tri-level Sync: ±0.3Vp-p or BB: 0.429Vp-p (NTSC) /0.45Vp-p (PAL) 75Ω, 2ea., BNC	SD-SDI: 270Mbps, 75Ω, BNC BB: 0.429Vp-p (NTSC) /0.45Vp-p (PAL), 75Ω, 2ea., BNC
I/O Delay	1H (when DVE is not applied to output), 1 frame +1H (KEY1, KEY2), 1 more additional frame when DVE is applied to output	
Memory Device	Memory card (compact flash card)	
Interfaces	RS-422: 6ea., 9-pin D-sub (female) (for Tally unit, Editor, etc) GPI IN: 1ea., 15-pin D-sub (female) GPI/TALLY OUT: 1ea., 25-pin D-sub (female) ALARM: 1ea., 9-pin D-sub (female) ARCNET: 75Ω or loopthrough, 1ea., BNC (for HANABI series option) Ethernet: 10/100Base-T, 1ea., RJ-45 (for HVS-DPUA) (with the HVS-38SS option expands to 2 ports)	
Temperature / Humidity	0°C - 40°C / 30% - 90% (no condensation)	
Power	100VAC - 240VAC 50/60Hz	
Consumption	Main Unit: 588VA (at 100VAC), 581VA (at 240VAC) (full option) HVS-12ROUA: 61VA (at 100VAC), 77VA (at 240VAC) HVS-16OUA: 65VA (at 100VAC), 85VA (at 240VAC) HVS-24OUA: 100VA (at 100VAC), 110VA (at 240VAC)	
Dimensions / Weight	Main Unit: 430 (W) x 177 (H) x 505 (D) mm, EIA 4RU / 26kg (full option) HVS-12ROUA: 430 (W) x 165.8 (H) x 468 (D) mm / 10kg HVS-16OUA: 640 (W) x 95 (H) x 460 (D) mm / 16kg HVS-24OUA: 787 (W) x 95 (H) x 460 (D) mm / 20kg	
Accessories	Main Unit: AC Cable / Rack mount brackets HVS-24OUA/16OUA/12ROUA: User's Manual / AC Cable / Connection Cable / Memory Card	
Options	Options for HVS-3800HS: HVS-38HSDI: HD/SD 12 Input Expansion Card / HVS-38DVE2D: HD/SD-compatible 2D DVE Card HVS-38DVE3D: HD/SD-compatible Real 3D DVE Card / HVS-38CC: Addition of Color Correction for HVS-3800HS Options for HVS-3800S: HVS-38SSDI: SD 12 Input Expansion Card / HVS-38SDVE2D: SD 2D DVE Card HVS-38SDVE3D: SD Real 3D DVE Card / HVS-38SCC: Addition of Color Correction for HVS-3800S Expansion Options: HVS-38IOEX: HVS-38AUMV/UC/DC Interface Card / HVS-38AUMV: Expansion of AUX/MV Card / HVS-38SS: Expansion of Still Store Card HVS-38SSAM: Expansion of Still Store and Animation Card / HVS-38UDIF: HVS-38UC/DC Interface Card / HVS-38UC: Up-converter Card (HVS-3800HS only) / HVS-38DC: Down-converter Card (HVS-3800HS only) Editor Interface Option: HVS-38ED: Editor Interface Hardware Options: HVS-38PSM: Redundant Power Supply for Main Unit / HVS-38PSO: Redundant Power Supply for Operation Unit HVS-TALR20/HVS-TALR32: Tally Relay Unit / HVS-TALOC20/HVS-TALOC32: Tally Open Collector Unit HVS-AUX8/16/32: AUX Switchbox with Shift / HVS-AUX8RK/AUXRK: AUX Panel Extension Kit	

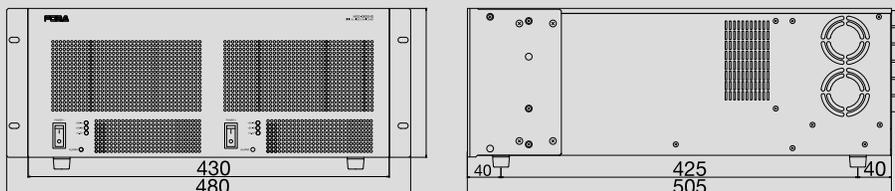
Block Diagram



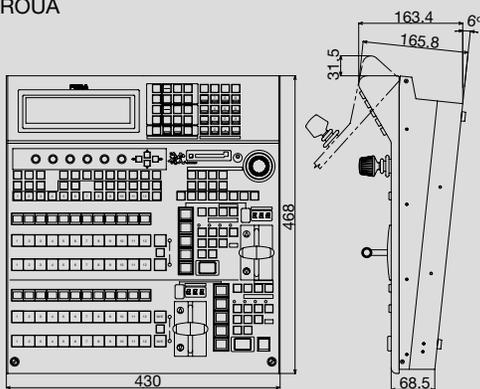
Main Unit Rear View (Full option)



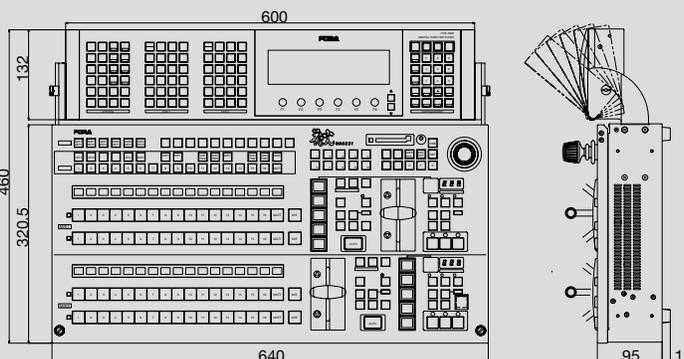
Main Unit External Dimensions



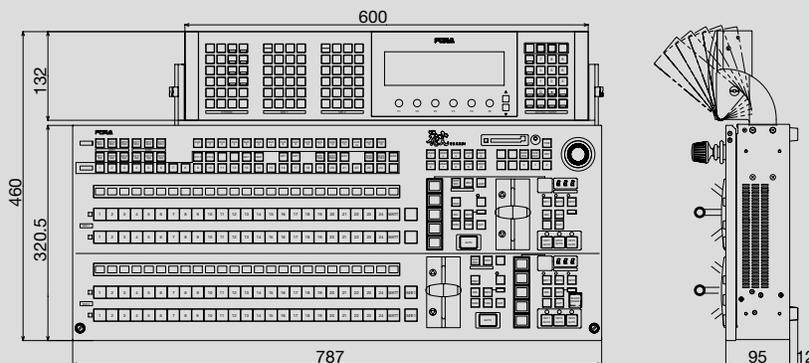
Operation Unit External Dimensions
HVS-12ROUA



Operation Unit External Dimensions
HVS-16OUA



Operation Unit External Dimensions
HVS-24OUA



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